

Work Order ID 135247

Thursday, August 06, 2015 3:38:06 PM

647.7811
B135247
REV. N/C

135247

Page 1

Item ID: 647.7811

Revision ID:

Item Name: Bracket B

Start Date: 8/06/15

Start Qty: 8.00

8

Required Date: 8/14/15

Req'd Qty: 8.00

8

Reference:

Approvals:

Process Plan: H

Date: 158-6

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

647.7800

n/c

100

0.00

100

BAND SAW

Bandsaw

Memo

Jeaspa Bandsaw

Cut Blank at 10.313"

0.07

B.A 15/08/10

8

0

DAS
08
9-89

110

0.01

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

HAAS CNC vertical machine #1

1-Machine per folio FB408
DWG REV: W/C
FOLIO REV: AA

0.04

B.A 15/08/11

8

0

DAS
08
9-89

2- deburr and break all sharp edges

RSH

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Work Order ID 135247

Thursday, August 06, 2015 3:38:06 PM

135247

Page 2

Item ID: 647.7811 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket B
Start Date: 8/06/15 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 8/14/15 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120			B-2	15/08/11		8	0		DAS 08 9-89
QC	Memo	0.01							
Quality Control									
130	QC8- Inspect parts - second check	0.00							
130						8	0		DAS 20 9-89 15-08-11
QC	Memo	0.03							
Quality Control									
131		0.00							
131									
Hand Finish	Memo	0.13							
Hand Finishing	CLEAN AND REMOVE ALL PART MARKING								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
☐ OTHER : _____					

Work Order ID 135247

Thursday, August 06, 2015 3:38:06 PM

135247

Page 3

Item ID: 647.7811 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket B
Start Date: 8/06/15 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 8/14/15 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140									
Outsource4	Memo	24.00							
Outsource process - Anodize	Issue P/O to ATG : <u>29446</u>								
	1- Black Anodize as per Dwg 647.7800								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Conformity is required								
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.03							
Quality Control									

CY AUG 12 2015 8

SA 8/15/08-20

(8)

DAS
38
9-89

AUG 20 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 135247

Thursday, August 06, 2015 3:38:06 PM

135247

Page 4

Item ID: 647.7811 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket B
Start Date: 8/06/15 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 8/14/15 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Identify as per dwg & Stock Location: <u>MF</u>	0.00							
180									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.01							
Quality Control									

MLJ 8P15-08-20

MLJ AUG 20 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Picklist Print

Thursday, August 06, 2015 3:38:10 PM

Page 1

Work Order ID: 135247

135247

Parent Item: 647.7811

647 7811

Parent Item Name: Bracket B

Start Date: 8/06/15

Required Date: 8/14/15

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP Rev A: RQ 15.08.06 Verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M7075T6B6.000X0.250

Purchased

No

100

f

27.7580

0.859

7.233684

M7075T6B6 000X0 250

15/08/10

7075-T6 BAR 6.000" X 0.250"

Location

Loc Qty

Loc Code

MAT005

27.758

M129584

3.758

~~M131259~~

12

→ M132458

12

8.500ft

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

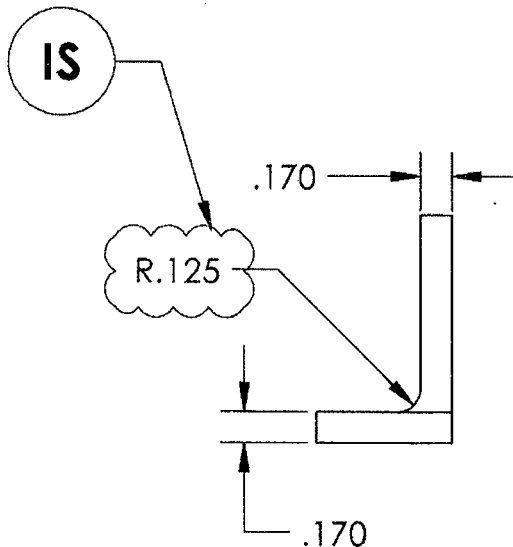
QA Closed: _____ Date: _____

Work Order update only ☐

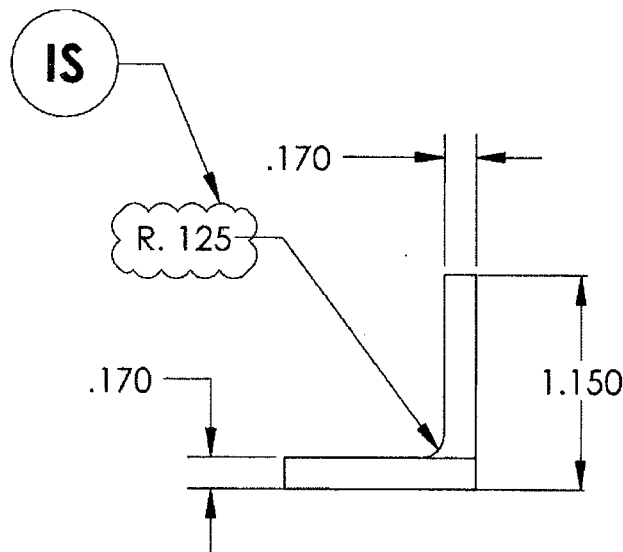
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 04487			SHEET 1 OF 1	
	DWG NO. 647.7800	REV: NC	PREPARED BY J. SOTO	DATE: 04/07/2014	EFFECT ON DWG ☐ INC. ☒ UNINC.
	DWG TITLE: BRACKET				
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF. NEXT ORDER	
TRANSACTION CODES (TC): A-ADD R-REVISE C-CREATE D-DELETE	REASON: REVISED DRAWING DIMENSIONS.				ECR: D-14-03

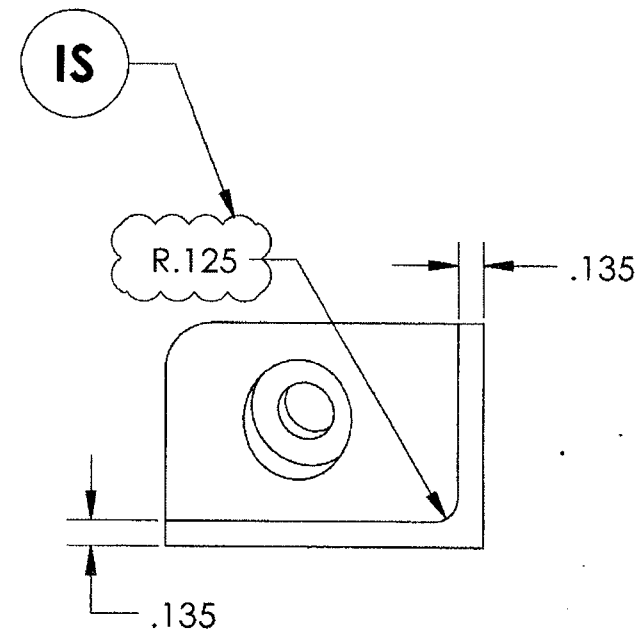
SHEET 4, ZONE B5 IS:



SHEET 5, ZONE C4 IS:



SHEET 9, ZONE D1 IS:

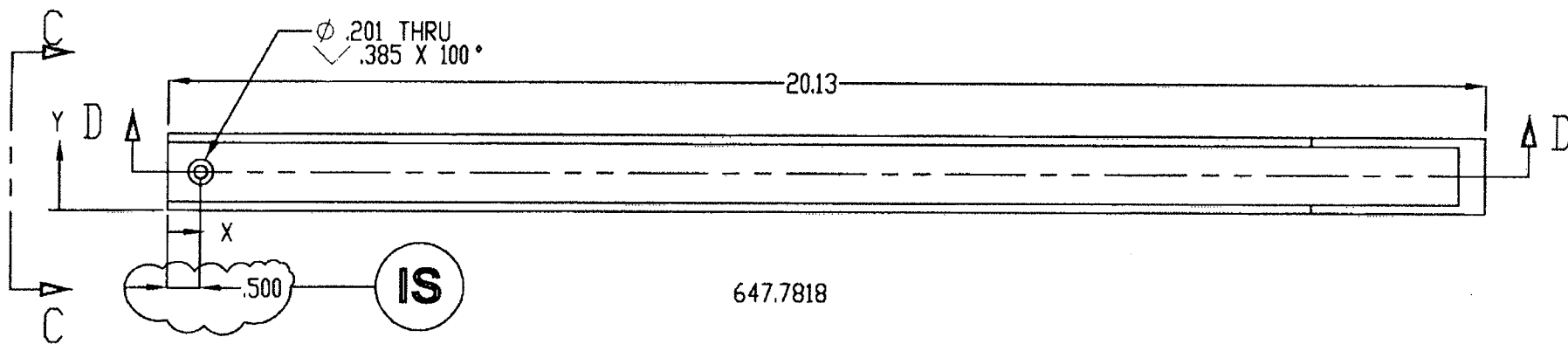


[Handwritten signature]
 S-8-6
 130247

DOCUMENTS EFFECTED:	☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM	CHANGE CATEGORY	DER REVIEW REQUIRED
		☐ MAJOR ☒ MINOR	☐ YES ☒ NO

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTIC NO. 03128				SHEET 1 OF 1	
	DWG NO. 647.7800	REV: NC	PREPARED BY E. CASTELLANI	DATE: 06/06/11	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: BRACKET					
APPROVED BY: ENGR <i>[Signature]</i>		MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: CURRENT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE		REASON: ADDED MISSING DIMENSION ON 647.7818.				

SHEET 6, ZONE B1:



647.7818

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION

DOCUMENTS EFFECTED:	☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ BOM	CHANGE CATEGORY ☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED ☐ YES ☒ NO
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1 2 3 4 5 6 7 8
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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE REVISION: P27		N/C
N/C	INITIAL RELEASE	12-21-09	P. BRAVO

NOTES:

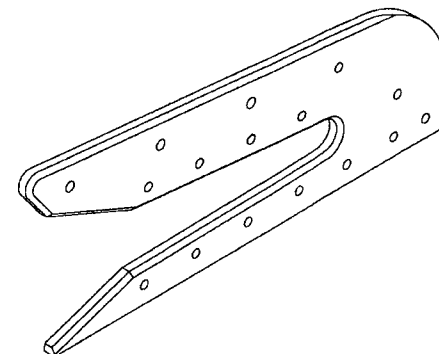
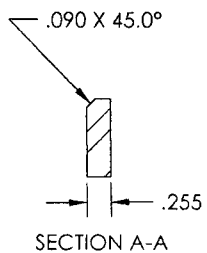
- A
- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: ANODIZE PER MIL STD-A-8625, TYPE III, CLASS 2, COLOR BLACK
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377J TYPE I CLASS N
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120
- B
- C
- D

UNINCORPORATED ECN(S)

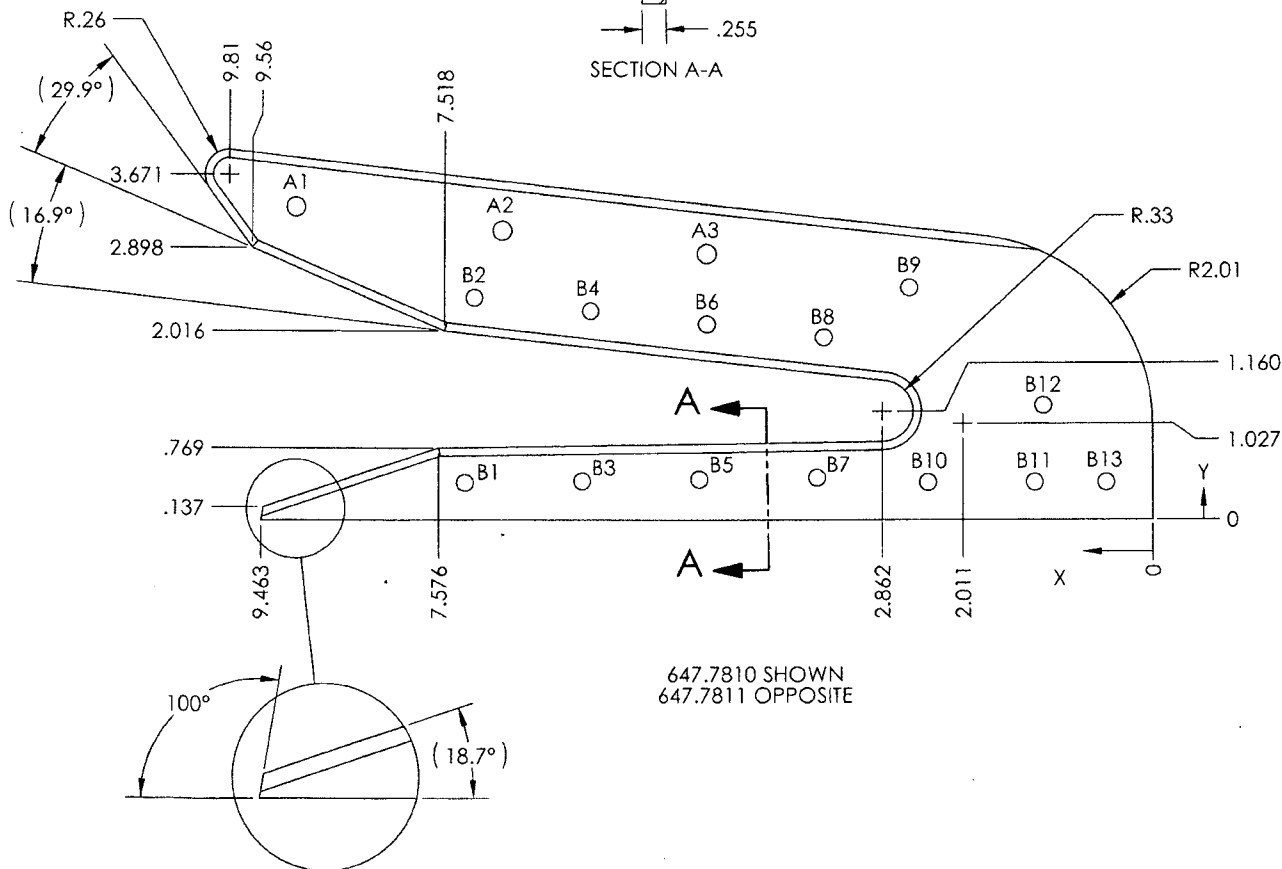
03128, 04487

		647.7822	EYE BOLT FITTING RH	△	△
		647.7821	EYE BOLT FITTING LH	△	△
		647.7820	CROSS BRACKET AFT	△	△
		647.7819	CROSS BRACKET FWD	△	△
		647.7818	MOUNTING CHANNEL	△	△
		647.7817	AFT BRACKET	△	△
		647.7816	AFT BRACKET	△	△
		647.7815	FORWARD BRACKET	△	△
		647.7814	FORWARD BRACKET	△	△
		647.7813	CENTER PLATE LOWER	△	△
		647.7812	CENTER PLATE UPPER	△	△
		647.7811	BRACKET B	△	△
		647.7810	BRACKET A	△	△
F/N		PART #	DESCRIPTION	MAT'L	SPEC
QTY	PARTS LIST				
NEXT ASSY (S)		ORIGINAL DATE (MM-DD-YY)	11-05-09	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92036-3512 (760)724-5300	
647.7300		DRAWN BY	CHECKER		
647.7400		E. ANDERSSON	P. BRAVO		
		DRAWING APPROVAL	12-21-09		
		ECN#	03128	BRACKET	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		REV	CAGE CODE
				B	07M26
				SCALE	NONE
				DWG. NO.	647.7800
				SHEET	1 OF 9

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647.7810
647.7811 OPPOSITE



TAG	X LOC	Y LOC	SIZE
A1	9.092±.002	3.332±.002	Ø .201 THRU
A2	6.906±.002	3.083±.002	Ø .201 THRU
A3	4.720	2.835±.002	Ø .201 THRU
B1	7.300±.002	.397±.002	Ø .177 THRU
B2	7.203±.002	2.369±.002	Ø .177 THRU
B3	6.050±.002	.415±.002	Ø .177 THRU
B4	5.961±.002	2.228±.002	Ø .177 THRU
B5	4.800±.002	.433±.002	Ø .177 THRU
B6	4.719±.002	2.088±.002	Ø .177 THRU
B7	3.550	.450	Ø .177 THRU
B8	3.476	1.947	Ø .177 THRU
B9	2.575	2.475	Ø .177 THRU
B10	2.380	.400	Ø .177 THRU
B11	1.250	.400	Ø .177 THRU
B12	1.160	1.220	Ø .177 THRU
B13	.500	.400	Ø .177 THRU

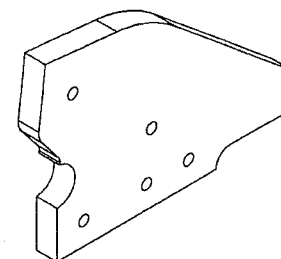
ORIGINAL DATE
ENCL 08-178 11-03-99
DRAWN BY: CHIEF
E. A. HODGSON P. BRAVO
DRAWING APPROVAL
P. BRAVO
CONTRACT NO.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.002
ANGLES ±.5°

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760) 724-5300
BRACKET
SHEET 2 OF 9

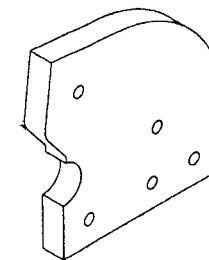
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

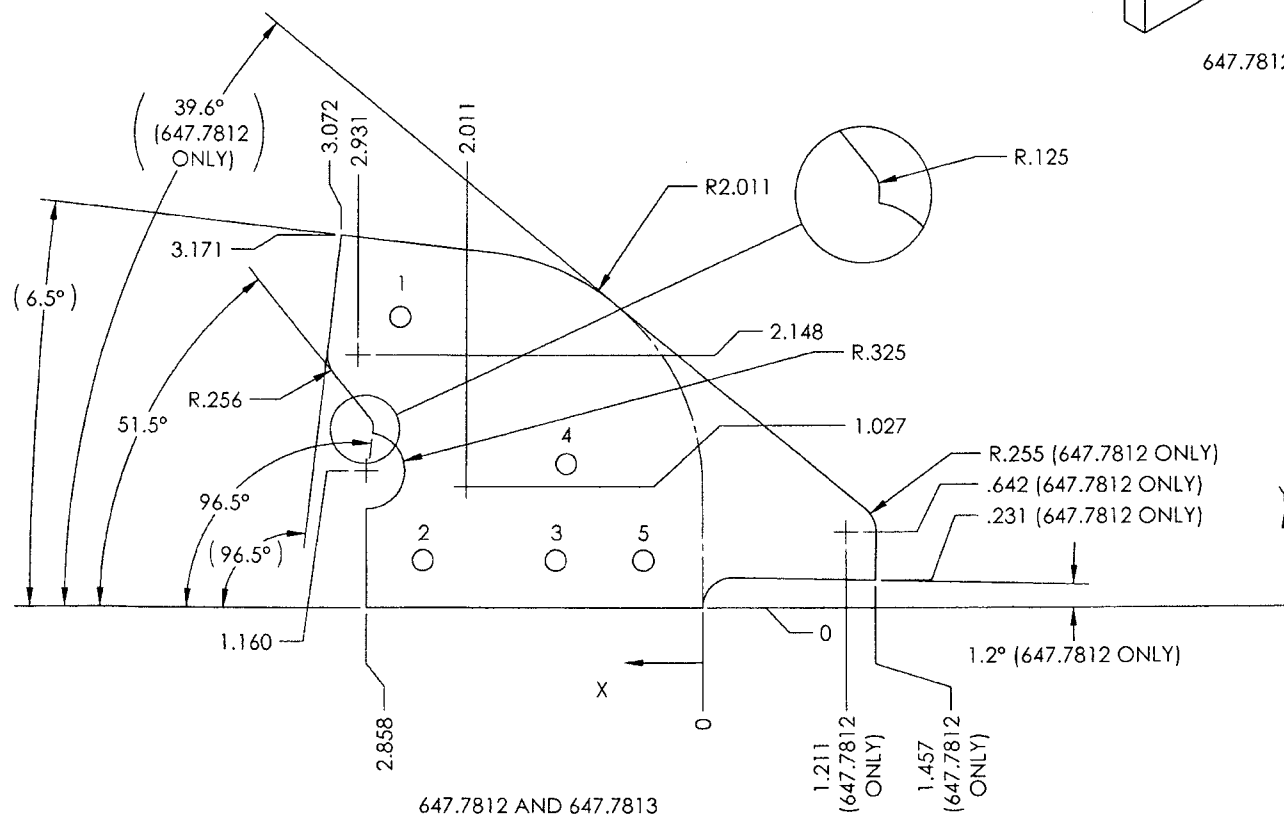
TAG	X LOC	Y LOC	SIZE
1	2.575±.002	2.475±.002	Ø.177 THRU
2	2.380±.002	.400±.002	Ø.177 THRU
3	1.250±.002	.400±.002	Ø.177 THRU
4	1.160±.002	1.220±.002	Ø.177 THRU
5	.500±.002	.400±.002	Ø.177 THRU



647.7812



647.7813

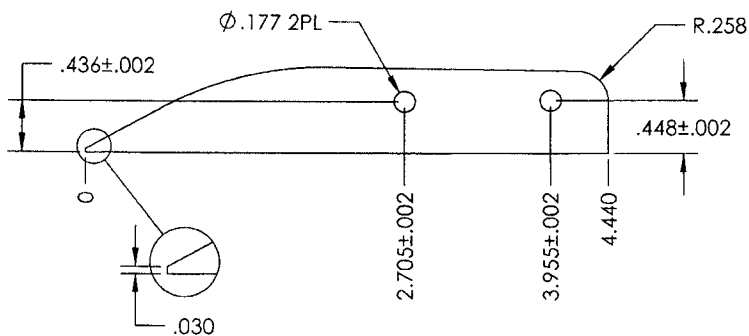
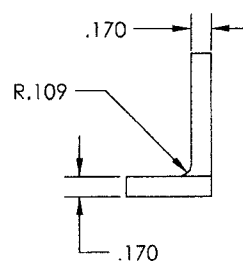
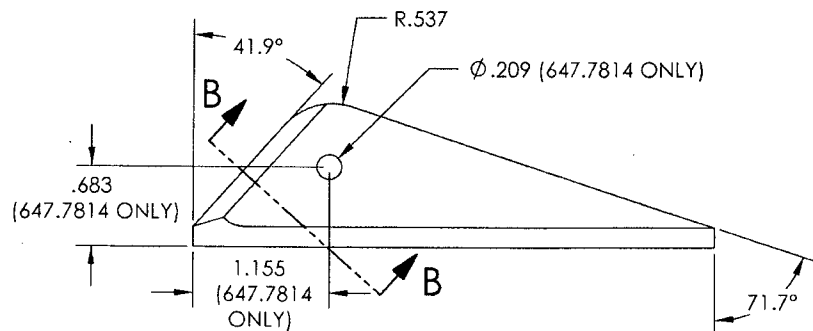
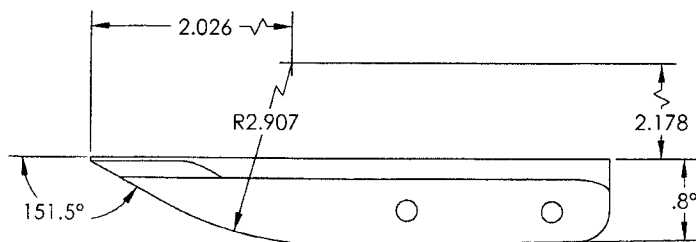


647.7812 AND 647.7813

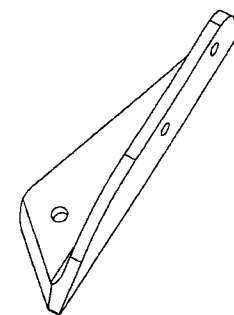
ORIGINAL DATE 11-05-08		APICAL INDUSTRIES	
DRAWN BY E. ANDERSSON		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		BRACKET	
CONTRACT NO.		DWG. NO. 647.7800	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.002 ANGLES ±.5°		DATE 07/11/06	REV N/C
SCALE: NONE		SHEET 3 OF 9	

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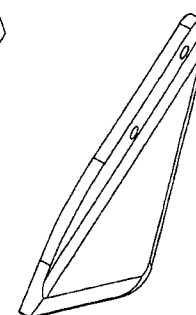
REVISION			
REV.	DESCRIPTION	DATE	APPROVED



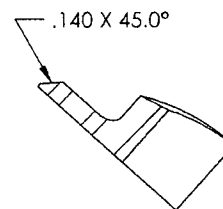
647.7814 SHOWN
647.7815 OPPOSITE



647.7814



647.7815



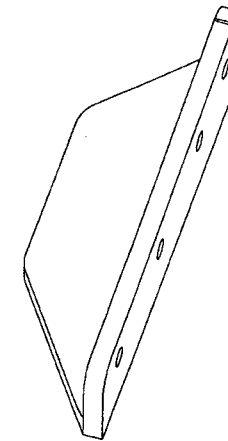
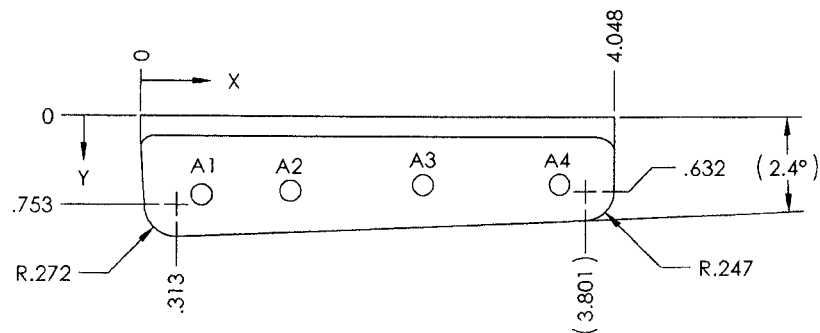
SECTION B-B

ORIGINAL DATE UNCOMPLETED 11-05-01		APICAL INDUSTRIES	
DRAWN BY E. ANDERSSON P. BRAVO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		BRACKET	
CONTRACT NO.		647.7800	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DIMENSIONS ±.01 2 PLACE DIMENSIONS ±.005 ANGLES ±.5°		SHEET 4 OF 9	REV. N/C

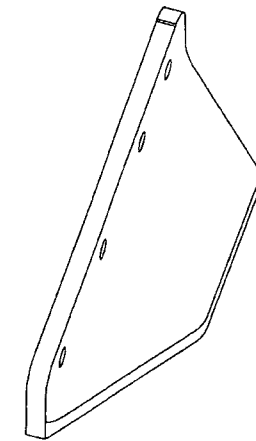
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES AND REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

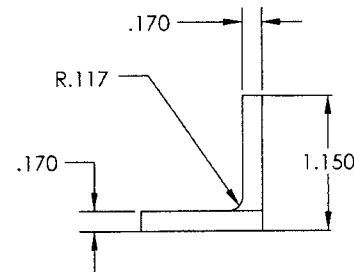
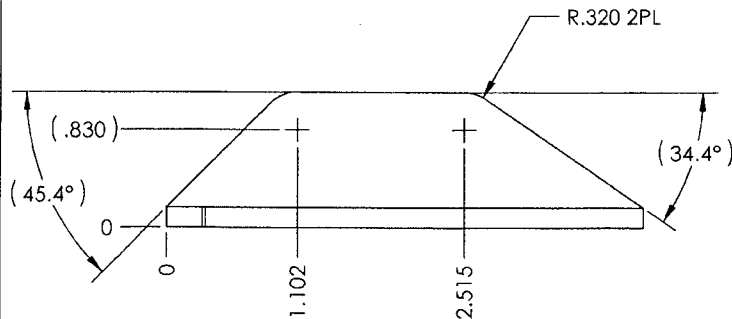
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A2	1.276±.002	.631±.002	Ø.177 THRU
A3	2.404±.002	.578±.002	Ø.177 THRU
A4	3.576±.002	.573±.002	Ø.177 THRU



647.7816



647.7817

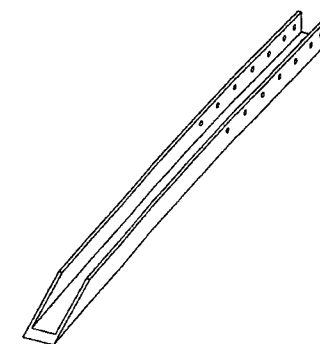
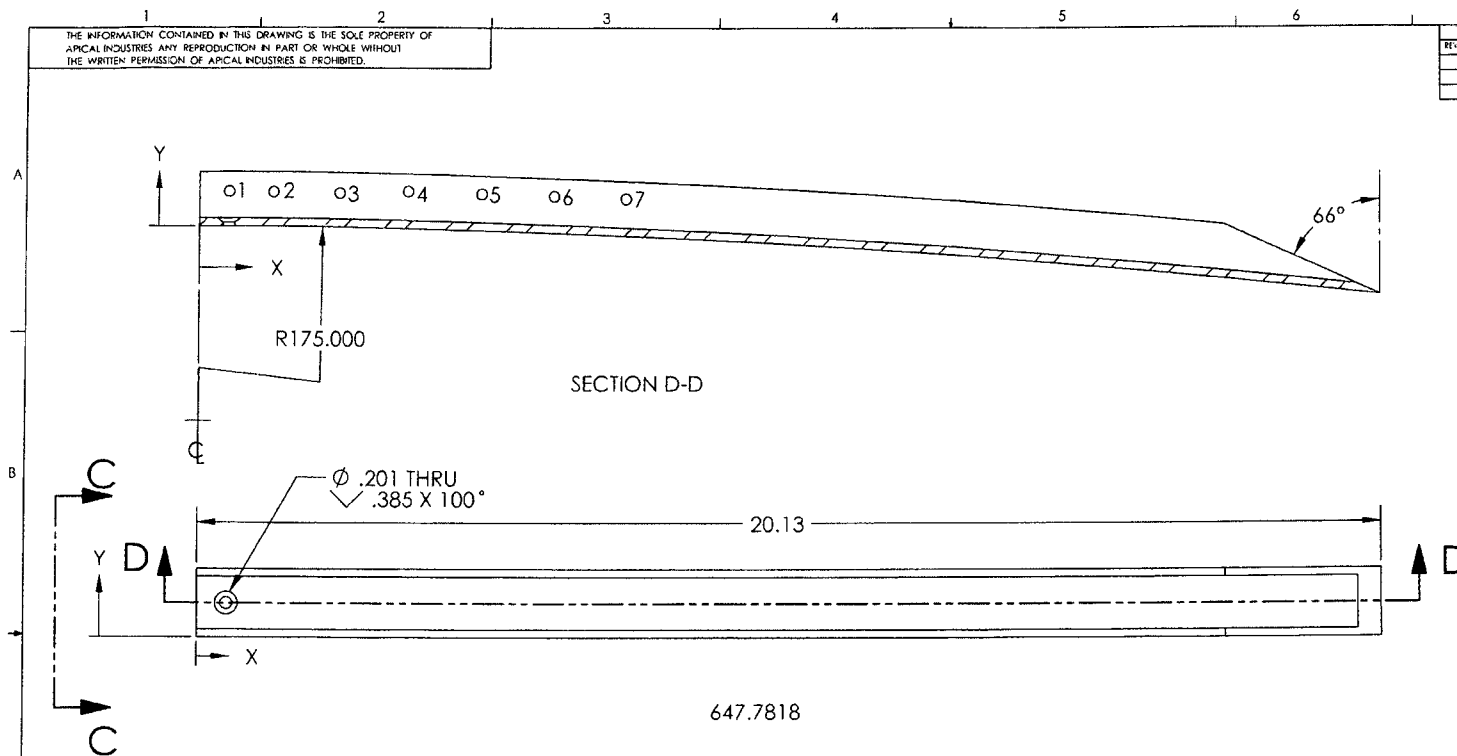


647.7816 SHOWN
647.7817 OPPOSITE

ORIGINAL DATE JUN 04 1993		APICAL INDUSTRIES	
DRAWN BY E. ANDERSON		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA, 92056-3512 (760) 724-5300	
CHECKED BY P. BRAYO		BRACKET	
DRAWING APPROVAL P. BRAYO		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET B 07M16	REV. N/C
SCALE NONE		SHEET 5 OF 9	

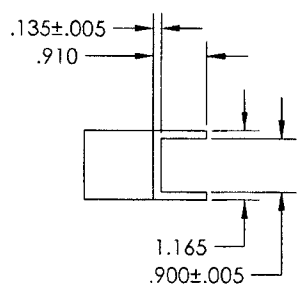
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



647.7818

647.7818



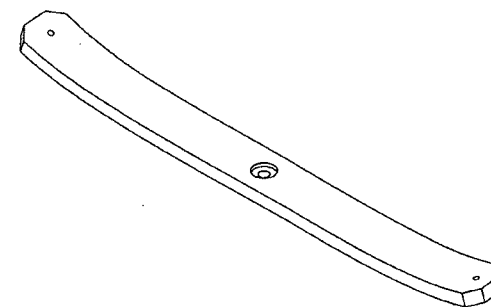
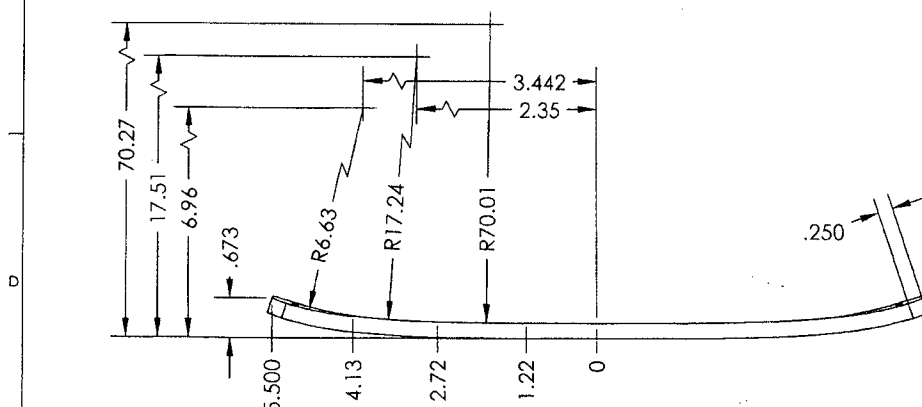
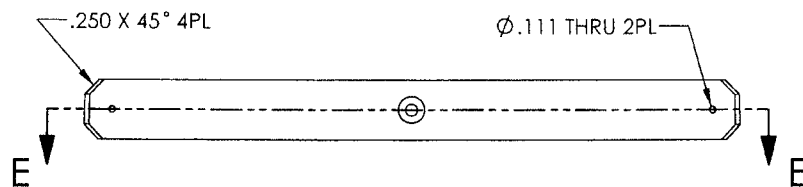
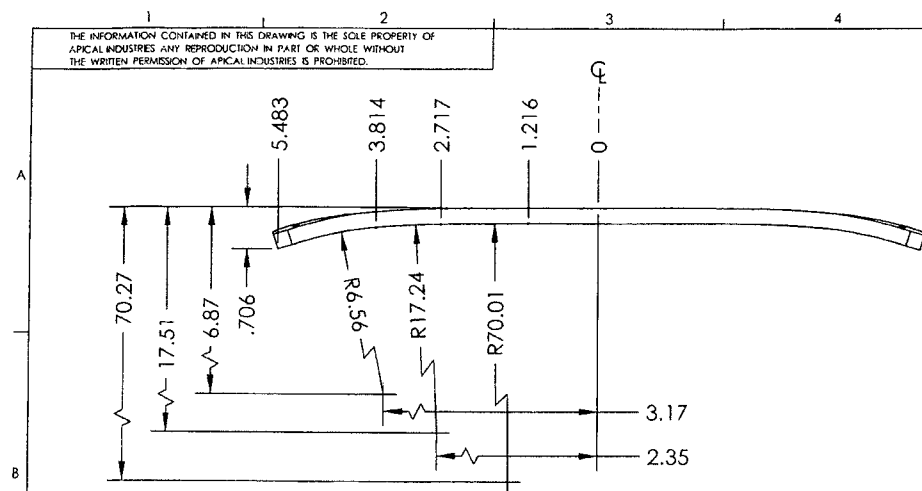
SECTION C-C

TAG	X LOC	Y LOC	SIZE
1	.506±.002	.578±.002	Ø.177 THRU
2	1.256±.002	.57±.002	Ø.177 THRU
3	2.386±.002	.549±.002	Ø.177 THRU
4	3.557±.002	.581±.002	Ø.177 THRU
5	4.806±.002	.544±.002	Ø.177 THRU
6	6.055±.002	.507±.002	Ø.177 THRU
7	7.305±.002	.470±.002	Ø.177 THRU

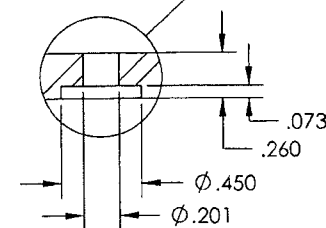
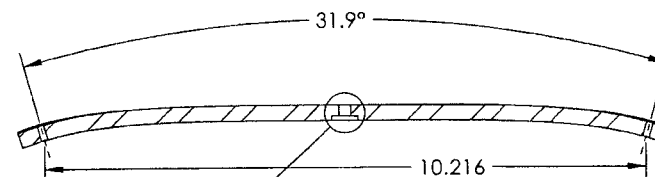
ORIGINAL DATE 11-25-09		APICAL INDUSTRIES	
DRAWN BY E. ANDERSSON P. BRAVO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		BRACKET	
CONTRACT NO.		REV. N/C	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE B	DWG. NO. 647.7800
SCALE NONE		SHEET 6 OF 9	

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



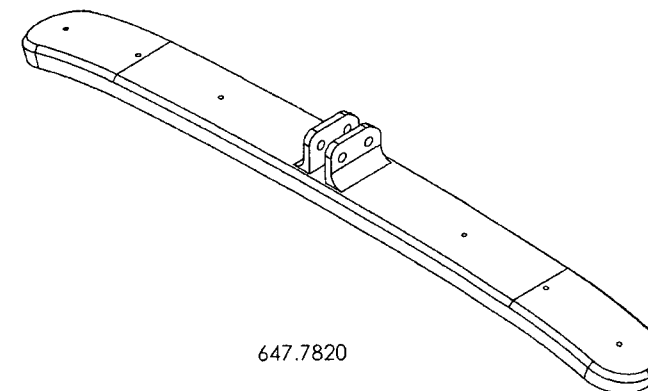
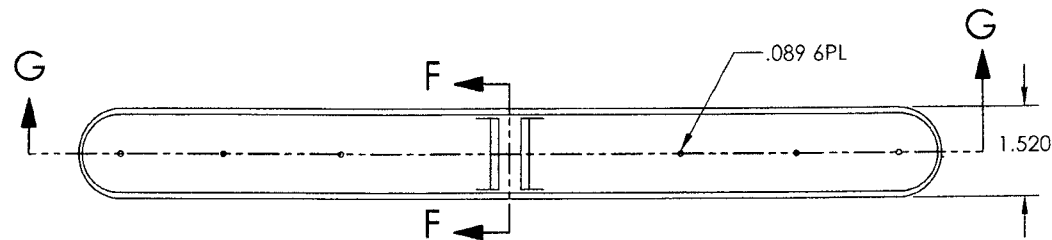
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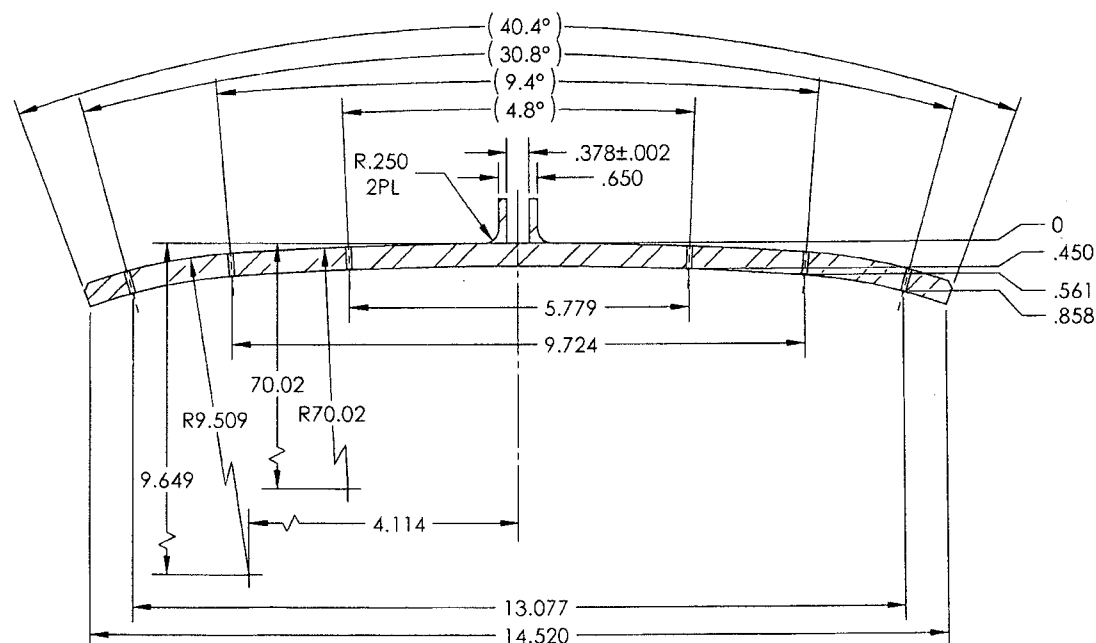
ORIGINAL DATE 11-05-07		APICAL INDUSTRIES	
DRAWN BY E. ANDERSON / P. BRAVO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		BRACKET	
CONTRACT NO.		647.7800	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET 7 OF 9	REV. N/C

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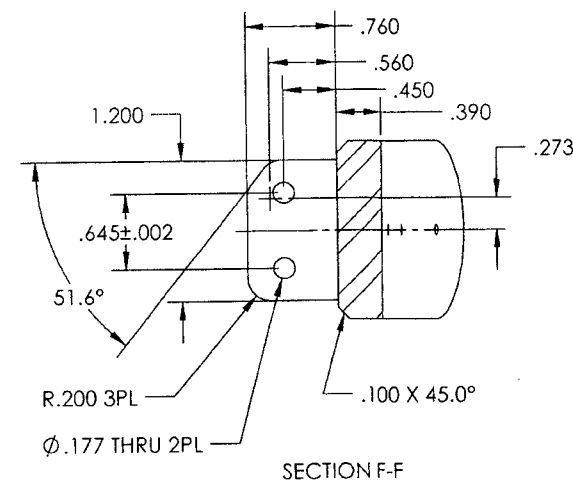
REVISE			
REV.	DESCRIPTION	DATE	APPROVED



647.7820



SECTION G-G

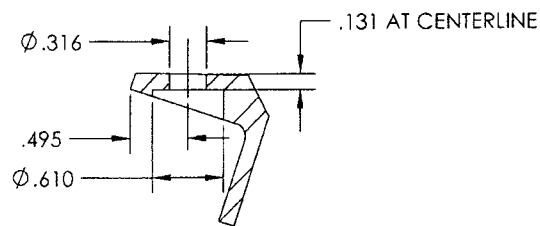
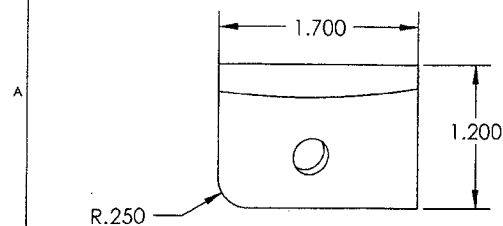


SECTION F-F

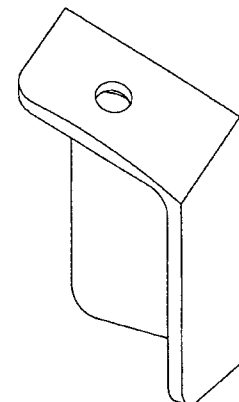
ORIGINAL DATE (NO. DATE) 11/01/09		APICAL INDUSTRIES	
DRAWN BY: CHECKER		2608 TEMPLE HEIGHTS DR.	
S. ANDERSON P. BRAVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		BRACKET	
CONTRACT NO.		647.7800	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE CAGE CODE DWG. NO. 647.7800	REV. N/C
B 07M26		SCALE NONE	SHEET 8 OF 9

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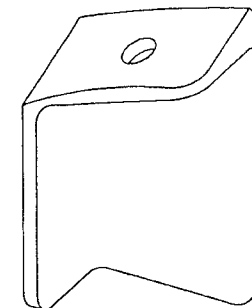
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



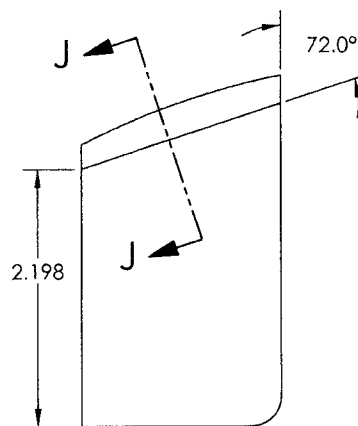
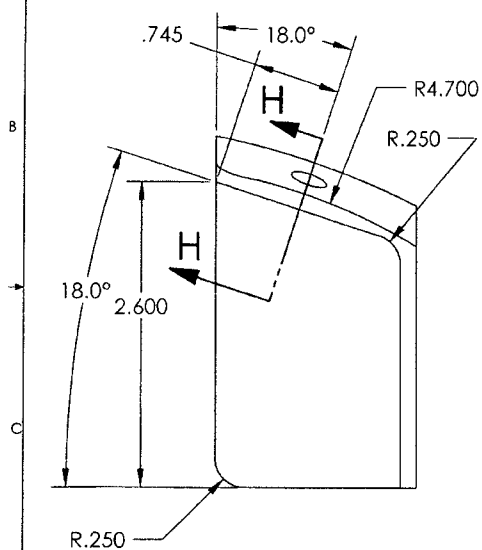
SECTION H-H



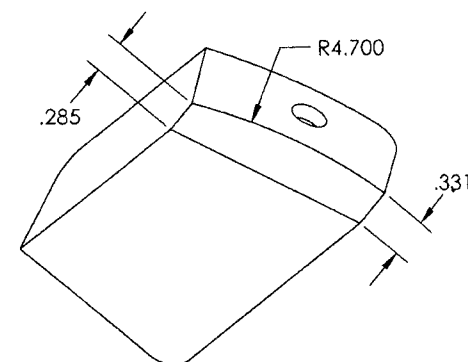
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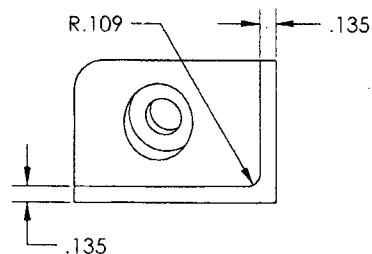
647.7822



SECTION J-J



SECTION K-K



647.7821 SHOWN
647.7822 OPPOSITE

ORIGINAL DATE 2/10/80 11:03:00		APICAL INDUSTRIES	
DRAWN BY: CHECKER		2608 TEMPLE HEIGHTS DR.	
1. ANDERSON P. BRAYVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL		BRACKET	
P. BRAYVO		647.7800	
CONTRACT NO.		SCALE: NONE	SHEET 9 OF 9
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 ANGLES ±.5°		REV N/C	

DART AEROSPACE LTD	Work Order: 135247
Description: BRACKET	Part Number: 647.7811
Inspection Dwg: 647.7800 Rev: N/C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.090x45°	+/- .005 / +/- .5°	0.090	✓		Vern	6A-13
0.255	+/- .005	0.253	✓		Mic	6A-03
9.81	+/- .010	9.813	✓		H-6	31006
R.26	+/- .010	R0.260	✓		R-6	REF.
29.9°	+/- .5°	29.9°	✓		Angle M.	CNC-17
3.671	+/- .005	3.674	✓		H-6	31006
16.9°	+/- .5°	16.9°	✓		Angle M.	CNC-17
9.463	+/- .005	9.462	✓		H-6	31006
100°	+/- .5°	100°	✓		Angle M.	CNC-17
18.7°	+/- .5°	18.7°	✓		H	"
9.092	+/- .002	9.091	✓		H-6	31006
3.332	+/- .002	3.332	✓		"	"
7.300	+/- .002	7.2995	✓		"	"
0.397	+/- .002	0.397	✓		"	"
2.575	+/- .002	2.575	✓		"	"
2.475	+/- .002	2.475	✓		"	"
0.500	+/- .002	0.5005	✓		"	"
0.400	+/- .002	0.400	✓		"	"

Measured by: J.A.	DAS 08-9-89	Audited by: 20 9-89	Preliminary Approval:
Date: 15/08/11		Date: 15-08-11	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO29446**

Purchase Order Date 8/12/2015

PO Print Date 8/14/2015

Page Number 1 of 3

Order From :

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

VC-ATG001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

PAID
AUG 14 2015

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via: VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
	Line Comments		Promise Date				
	Delivery Comments						

1	135232	647.7611 LOWER DEFLECTOR REV. N/C	8/18/2015		4.00	\$18.00	\$72.00
---	--------	-----------------------------------	-----------	--	------	---------	---------

Yes

8/18/2015

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Line Total: \$72.00

2	135246	647.7810 BRACKET REV. N/C	8/18/2015		8.00	\$18.00	\$144.00
---	--------	---------------------------	-----------	--	------	---------	----------

Yes

8/18/2015

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Line Total: \$144.00

3	135247	647.7811 BRACKET REV. N/C	8/18/2015		8.00	\$18.00	\$144.00
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Yes

8/18/2015

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N

Note:

8/14/2015

SP15-08-20



A.T.G. Industries Inc.
731, rue Industrielle Rd.
PLATING DEPARTMENT
Rockland, On K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 63874

Date: 19-Aug-15

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description		
4 ea	Part: 647.7811 LOWER DEFLECTOR MIL-A-8625 TY III CL 2 PRIMER AS PER MIL-PRF-23377J TY I CL N Job: 20150624 PO: PO29446	Rev: N/C	Line:
8 ea	Part: 647.7810 BRACKET MIL-A-8625 TY III CL 2 PRIMER AS PER MIL-PRF-23377J TY I CL N Job: 20150625 PO: PO29446	Rev: N/C	Line:
8 ea	Part: 647.7811 BRACKET MIL-A-8625 TY III CL 2 PRIMER AS PER MIL-PRF-23377J TY I CL N Job: 20150626 PO: PO29446	Rev: N/C	Line: SP15-08-20
1 lot	Part: D5155-11 CO-PILOT BLACK ANODIZE MIL-A-8625 TYPE II CLASS 2 Job: 20150627 PO: PO29446	Rev: B	Line:
Certificate of Conformance AT.G. Industries certifies that all items in this shipment are in conformance with all requirements, specifications and drawings referenced in the purchase order. ISO 9001 : 2008 REGISTERED ATG SALES-2010 TERMS APPLY			



A.T.G. Industries Inc.
731, rue Industrielle Rd.
PLATING DEPARTMENT
Rockland, On K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 63874

Date: 19-Aug-15

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms	Ship Via								
<table border="1"><thead><tr><th>Quantity</th><th>Description</th></tr></thead><tbody><tr><td colspan="2">DATE: <u>12/18/15</u></td></tr><tr><td colspan="2">CERTIFIED SIGNATURE: <u><i>RMM</i></u></td></tr><tr><td colspan="2">RECEIVER SIGNATURE: <u><i>Chantal L...</i></u></td></tr></tbody></table>		Quantity	Description	DATE: <u>12/18/15</u>		CERTIFIED SIGNATURE: <u><i>RMM</i></u>		RECEIVER SIGNATURE: <u><i>Chantal L...</i></u>	
Quantity	Description								
DATE: <u>12/18/15</u>									
CERTIFIED SIGNATURE: <u><i>RMM</i></u>									
RECEIVER SIGNATURE: <u><i>Chantal L...</i></u>									

SP15-08-20